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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|----------------------|------------------|
| 10/765,287 | 01/27/2004 | William M. Andre | #012 [2756.3012.001] | 9184 |
| 7590 | 06/04/2007 | | EXAMINER | |
| William M. Francis | | | ROSS, DANA | |
| Reising, Ethington, Barnes, Kisselle, P.C. | | | ART UNIT | PAPER NUMBER |
| P.O. Box 4390 | | | 3722 | |
| Troy, MI 48099-4390 | | | | |
| | | | MAIL DATE | DELIVERY MODE |
| | | | 06/04/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/765,287 | ANDRE ET AL. | |
| | Examiner | Art Unit | |
| | /Dana Ross/ | 3722 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 10 May 2007.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-25 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-7,9-17 and 19-25 is/are rejected.

7) Claim(s) 8 and 18 is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____

5) Notice of Informal Patent Application

6) Other: _____

DETAILED ACTION

Oath/Declaration

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because: It does not state that the person making the oath or declaration acknowledges the duty to disclose to the Office all information known to the person to be material to patentability as defined in 37 CFR 1.56.

Examiner notes that it has come to the office's attention that many Oaths/Declarations are deficient and therefore the office has provided the following as guidance:

CORRECT STATEMENT should read "I acknowledge the duty to disclose information which is material to patentability of this application in accordance with Title 37, Code of Federal Regulations Section 1.56."

INCORRECT STATEMENTS:

"I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations Section 1.56(a)"

"I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations Section 1.56(a)"

"I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations Section 1.56"

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-2, 5, 7, 9, 11, 12, 15, 17, 19, and 21-23 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,429,376 to Mueller et al.

Mueller et al. discloses an apparatus (C) to releaseably retain a workpiece (W) comprising: a body (12); at least one diaphragm (45) carried by the body and defining at least in part a fluid chamber (44b) constructed to contain a fluid. The at least one diaphragm having an annular flange portion axially abutting and attached to at least a portion of the body (see figs.1, 5). At least one collet (22) having at least one displacement relief (see fig. 2), a diaphragm engaging surface and a workpiece engaging surface (see fig. 5), and being carried by the body (see figs.1, 5). When the fluid in the fluid chamber is pressurized a drive force is transmitted through the at least one diaphragm and the at least one collet to urge the at least one collet into engagement with the workpiece to releasably retain the workpiece (see Abstract). At least one interengagement feature (48) interengaging the at least one diaphragm, and the at least one collet to resist the at least one collet from twisting relative to the at least one diaphragm (see figs.1, 5). A ring member (21) disposed axially rearward of the at least one collet (see fig.1); and at least one drive pin (26) extending axially through the at least one collet and into a portion of the ring member to resist the at least one collet from twisting relative to the at least one diaphragm (see figs.1, 5).

Regarding claims 1, 11, 21 and 22, Mueller expressly discloses the diaphragm (45) (driven member) having a portion that is radially displaceable through air under pressure which is fed through passages 69, 71, 72 and 73 to passage 44b to “uniformly radially inflate the resilient bladder ring 45 to cause it to bear radially against the fingers 22c and 22d” (see col. 4, line 44 through col. 5, line 16 and col. 5, lines 48-53). Examiner further notes that the radially inflating of the resilient bladder (diaphragm, drive member) will resist rotation relative to the body by its radially bearing against the internal parts of the tool holder.

Examiner notes that the “body” of Mueller’s invention is not given a direct reference number, however it is clear from the reference to the “body base element 12” (see figure 1 for a representation of the body with the base element 12, and see col. 3, lines 28-31) that the tool holder of Mueller does have a “body”. The reference to the “body” of Mueller is given as a reference to the Mueller cited reference number “12” in the previous and current reference to Mueller. Examiner notes that those familiar with tool holders will understand that reference to reference number “12” is a reference to the “body” of Mueller’s invention, and is presented as such in the Examiner’s rejection.

Regarding claims 5 and 15, Mueller teaches the limitation of at least one drive member and at least one driven member threaded together since the screw 26 (see figure 1) threads the drive member and driven member together.

4. Claims 1, 2, 9-12, and 19-23 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,015,154 to Andre et al.

Andre et al. discloses an apparatus (10) to releaseably retain a workpiece (12) comprising: a body (30); at least one diaphragm (26) carried by the body and defining at least in part a fluid chamber (18) constructed to contain a fluid. The at least one diaphragm having an annular flange portion axially abutting and attached to at least a portion of the body (see fig.1). At least one collet (14) having at least one displacement relief (24), a diaphragm engaging surface, a workpiece engaging surface, and being carried by the body (see fig.1). When the fluid in the fluid chamber is pressurized a drive force is transmitted through the at least one diaphragm and the at least one collet to urge the at least one collet into engagement with the workpiece to releasably retain the workpiece (see columns 1 and 2, lines 53-67 and 1-2, respectively). At least one interengagement feature (50) interengaging the at least one diaphragm, and the at least one collet to resist the at least one collet from twisting relative to the at least one diaphragm (see fig.1). The apparatus is an arbor such that the workpiece substantially circumscribes the at least one collet and fluid pressure acts through the at least one diaphragm to expand the at least one collet radially outwardly into engagement with the workpiece (see fig.1, and columns 1 and 2, lines 53-67 and 1-2, respectively).

Regarding claims 1, 11, 21 and 22, Andrea expressly discloses the diaphragm 26 (drive member) having a portion that is radially displaceable by the force produced by the pressurized fluid which "acts on the metal sleeves 14, 16 through the polymeric rings 26 to expand the sleeves 14, 16 into engagement with the workpiece 12" (see figure 1 which shows the flow of the pressurized fluid through the channel and to the diaphragm 26 (drive member) which expands

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radially to expand sleeves 14, 16 into engagement with the workpiece 12, see also col.2, lines 60-63, for example).

Examiner notes that with this expansion and engagement of these parts, that the diaphragm 26 (drive member) resists rotation relative to the body.

5. Claims 1, 2, 9, 10, 22, and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,441,284 to Mueller et al.

Mueller et al. discloses an apparatus (10) to releasably retain a workpiece (12) comprising: a body (22); at least one drive member (82) carried by the body and defining at least in part a fluid chamber (116) constructed to contain a fluid. The at least one drive member having an annular flange portion axially abutting and attached to at least a portion of the body (see figs.1, 5). At least one driven member (34) is carried by the body (see fig.1), and having at least one displacement relief (38). When the fluid in the fluid chamber is pressurized a drive force is transmitted through the at least one drive member and the at least one driven member to urge the at least one driven member into engagement with the workpiece to releasably retain the workpiece (see fig. 5, and column 1, lines 42-57). At least one interengagement feature (132) interengaging the at least one drive member, and the at least one driven member to resist the at least one driven member from twisting relative to the at least one drive member (see fig.1). The apparatus is an arbor such that the workpiece substantially circumscribes the at least one driven member and fluid pressure acts through the at least one drive member to expand the at least one driven member radially outwardly into engagement with the workpiece (see fig.1, and column 1, lines 42-57).

Regarding claims 1 and 22, Mueller expressly discloses the diaphragm 82 (drive member) having a portion that is radially displaceable. The diaphragm 82 being a resilient expandable bladder ring that engages the radially inner surfaces of the deflectable portions 58 (see figure 1 and col. 3, lines 40-52, for example).

Examiner further notes that the expansion of the diaphragm 82, through the expansion and connection with the deflectable portions, resists rotation relative to the body.

6. Claims 21, 24 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by US Pat. No. 4,699,389 (Buck).

Buck teaches a collet 31 with interengagement elements (threaded and splined, see figures 2 and 3, for example) engaging sleeve (diaphragm) 15.

Examiner notes that the amended claimed collet limitations are directed towards its intended use with a workholding apparatus having a diaphragm, not to the actual structure of the collet. Buck teaches the structural limitations of the collet, and the structure of the diaphragm on the workholder is a limitation of the non-claimed workholding apparatus.

The recitation of the collet with the intended use with a workholding apparatus with a diaphragm must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mueller '376 in view of Buck, Muller '284 in view of Buck, and over Andre in view of Buck.

Both Mueller '376 and '284, and Andre teach all aspects of claims 1 and 11.

Examiner notes that splined connects are clearly an alternative way to connect two elements together as is taught by Buck. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a splined connection for the purpose of connecting elements together and prevent relative movement.

9. Claims 3-4 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mueller '376.

Mueller '376 teaches at least one drive pin extends radially through a portion of the at least one driven member and a portion of the at least one drive member. It would have been obvious to one of ordinary skill in the art to have replaced the axially extending drive pin shown above of Mueller '376 with one having a radially extended pin, in order to provide a more accessible pin and since the rearrangement of parts requires only routine skill in the art. Furthmore, Mueller '376 teaches it is known to use radially aligned pins (18) (see figure 5).

Allowable Subject Matter

10. Claim 8 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

11. Applicant's arguments with respect to claims 1-25 have been considered but are moot in view of the new ground(s) of rejection.

However, in an attempt to expedite prosecution, Examiner will address the key issues addressed in Applicant's arguments.

Applicant asserts:

The Mueller '376 reference discloses a chuck C, which includes a ring 13 bolted to a base 12. A resilient inflatable bladder ring 45 is carried by an annular bladder ring support 44 mounted atop the ring 13. A fluid chamber 44b is defined between the bladder ring 45 and bladder ring support 44. Note that the fluid chamber 44b is not defined between the bladder ring 45 and the base 12. An outboard collet 22 is bolted to a piston 21, which is positioned in a cylinder 20 defined by the base 12 and ring 13. Finally, a cover ring 48 is bolted to the ring 13. Note the bladder ring 45 does not have an annular flange portion attached to any portion of the base 12, and certainly not for the purpose of resisting rotation of the ring 45 relative to the base 12.

Examiner notes that the claimed limitation of claim 1 is "said body defining at least partially defining a fluid chamber therebetween for containing a fluid"; the claimed limitation of claim 11 is "at least one diaphragm carried by said body and defining at least in part a fluid chamber constructed to contain a fluid" and "whereby when the fluid in said fluid chamber is pressurized a drive force is transmitted through said at least one diaphragm and said at least one collet to urge said at least one collet into engagement with the workpiece to releasably retain the workpiece"; claim 21 has no limitation on the fluid chamber; the claimed limitations of claim 22

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is “said at least one drive member and said body at least partially defining a fluid chamber therebetween for containing a fluid”.

Examiner notes there is no limitation in the claims that the fluid chamber be defined between the bladder ring and the base.

All claimed limitations regarding the limitations of the fluid chamber is found in the cited prior art.

Examiner notes that the claimed limitation of claims 1 and 22 is “said at least one drive member having an annular flange portion axially abutting and attached to at least a portion of said body”; claim 11 states “said at least one diaphragm having an annular flange portion axially abutting and attached to at least a portion of said body”; claim 21 has no limitations on the annular flange.

Examiner notes that each of the cited references with a diaphragm teach the diaphragm with an annular flange. Examiner further notes that a “portion” of the annular flange is axially abutting and attached to at least a “portion” of the body. The annular flange of the diaphragm is connected with various body “portions”, as a minimum as a way to hold the parts of the holder together.

Applicant asserts:

The Andre reference discloses a main body 30 carrying an annular retainer 70, which in turn carries a polymeric ring 26, wherein a fluid chamber 18 is defined therebetween. **Note that the fluid chamber 18 is not defined between the ring 26 and the body 30.** A tubular metal sleeve 14 is carried on the ring 26 and includes tabs 62 received in slots 64 of a stop ring 50 to drive the sleeve 14. **Note the ring 26 does not have an annular flange portion attached to any portion of the body 30, and certainly not for the purpose of resisting rotation of the ring 26 relative to the body 30.**

Applicant is referred to the above response to the Mueller comments.

Applicant asserts:

The Mueller '284 reference discloses a chuck apparatus 10 having a chuck body 20 including a base 22 and an annular chucking module 34. An expandible bladder ring 82 is mounted on a bladder retainer 78, which is bolted to the chuck body 20. An annular distribution groove 116 is defined between the ring 82 and the retainer 78. **Note that the distribution groove 116 is not defined between the ring 82 and the body 20. Note also that the ring 82 does not have an annular flange portion attached to any portion of the body 20, and certainly not for the purpose of resisting rotation of the ring 82 relative to the body 20**

Applicant is referred to the above response to the other Mueller reference.

Applicant asserts:

The Buck references discloses a collet chuck assembly 30 including a housing 11 for attachment to a machine tool, an activating sleeve 15 disposed in the housing 11 and having annular threads on a rearward end for connection to an actuator 26 of the machine tool. The assembly 30 also includes a collet 31 disposed in the sleeve 15 and including elastomeric segments 35, and metal blades 36 between the segments 35 with end portions 39 projecting beyond the segments 35. **Note that the end portions 39 do not engage anything, and not a diaphragm and certainly not for the purpose of resisting relative rotation of the collet 31.**

Examiner notes that the Buck reference was used in the rejection of claim 21 which claims a "collet", and not the limitations of a holder with a diaphragm. The only limitation for the collet of claim 21 was that it is able to be used with a holder with a diaphragm. Buck meets this limitation.

It is not clear what is being addressed as to the end portions 39, however Examiner notes that the end portions 39 do engage the holder and are in fact expandable to create an axial force against the holder body.

Applicant states:

Amended Claims 1 and 22

As amended, claims 1 and 22 recite, *inter alia*, at least one drive member carried by a body, wherein a fluid chamber is at least partially defined therebetween and wherein the drive member includes a portion that is radially displaceable. Amended claims 1 and 22 also recite, *inter alia*, that the at least one drive member has an annular flange portion axially abutting and attached to at least a portion of the body to resist rotation of the drive member relative to the body. Amended claims 1 and 22 further recite, *inter alia*, at least one driven member is carried by the body and has at least one displacement relief therein.

Examiner agrees with Applicant in the above statement.

Applicant asserts:

The cited references fail to disclose an annular flange portion of a drive member axially abutting and attached to the body to resist rotation of the drive member relative to the body. Rather, the Mueller '376 reference discloses that a bladder ring 45 is merely mounted on the retainer 44, which includes beads 44a for securely mounting and sealing the complementary configured, annular return lips 45a of the ring 45. But a review of the Mueller '376 reference reveals that the return lips 45a are not attached to the retainer 44, and certainly not for the purpose of resisting rotation of the ring 45 relative to the base 12. In fact, the ring 45 can rotate relative to the retainer 44 or base 12, precisely because the ring 45 is not attached thereto.

It is noted that the claimed limitations is not that the drive member is "attached to the body", but instead is attached to at least a portion of the body. It is further noted that there is no limitations directed to the claimed structure of the "body", or the "portions" of the body, of the

workholding apparatus. Examiner notes that it is well known in the art that the body is the main portion of the workholding apparatus and the parts of the workholding apparatus are attached to each other, either directly or indirectly, to form the physical structure of a workholding apparatus. In the cited prior art, the "body" includes the base, sides, and general structure of the workholding apparatus. It is further noted, that the claimed diaphragm is part of the body of the workholding apparatus.

Applicant appears to assert that the diaphragm 45 is not attached to the structure of the base, and therefore the prior art does not meet the claimed limitations. Examiner disagrees.

First, Examiner notes that the diaphragm 45 is attached to the base 12, through the connections found in the body of the workholding apparatus. Examiner further notes that the body of the workholding apparatus is connected directly with the diaphragm 45.

Applicant asserts:

Similarly, the Mueller '284 reference discloses a bladder ring 82 mounted on a retainer 78, which includes flanges 86, 88 to capture distal ends 84 of the ring 82. But a review of the Mueller '284 reference reveals that the distal ends 84 are not attached to the flanges 86, 88, and certainly not for the purpose of resisting rotation of the ring 82 relative to the base 22. In fact, the ring 82 can rotate relative to the retainer 78 or base 22, precisely because the ring 82 is not attached thereto.

Examiner disagrees. Mueller '284 expressly discloses the bladder ring 82 attached to the body (see figure 1) and having the radial displacement to resist rotation as claimed. See above comments and rejections.

Applicant asserts:

Likewise, the Andre reference discloses a ring 26 having opposed flanges 72, which in assembly engage shoulders 74 of a retainer 70. But a review of the Andre reference reveals that the flanges 72 are not attached to the shoulders 74 of the retainer, and certainly not for the purpose of resisting rotation of the ring 26 relative to the body 30. In fact, the ring 26 can rotate relative to the retainer 70 or body 30, precisely because the ring 26 is not attached thereto.

Examiner disagrees. Andre teaches a radially expanding ring 26 which is attached to the body (see figure 1) and having a radial displacement to resist rotation as claimed. See above comments and rejections.

Applicant asserts:

Applicant notes that the Office Action fails to specifically identify any disclosure in any of the references of a drive member annular flange attached to a body, and none is apparent. At best, the cited references disclose lips 45a, flanges 72, or flanges 86, 88, which are merely mounted and sealed, engaged, or captured by a ring support 44, retainer 70, or retainer ring 78. But the mounting and sealing, engaging, or capturing action does not amount to attachment as claimed by Applicant. The term "attach" means to fasten on or affix to; connect or join.¹ The Applicant's specification discloses using screws 50 as one example of attaching a flange to a body and, thus, does not indicate that the term is being used more broadly than its dictionary definition.

Examiner notes that there is no claimed limitations in the claims for "a drive member annular flange attached to a body". Applicant is referred to the above discussions between Applicant's arguments and that which is claimed in the claims. Examiner further notes that the

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diaphragm of the prior art references teach that the diaphragms taught in the prior art are “attached” to the body in accordance with Applicant’s understanding of the definition of “attach” and the claimed limitations.

Applicant asserts:

Further, in the response to arguments section of the Office Action of November 4, 2006, it is generally asserted that Applicant’s claimed “body” could be considered to include several different components and that Applicant’s claimed “drive member” could be considered to include “any” component carried by the body. For example, it is asserted that the body 22 in Mueller ‘284 can also include components “shown near” the adaptor plate 24 or the retainer 78, and that the drive member can include the bladder ring 82 and also the dowels 120 and the retainer 78.

Applicant respectfully submits that such a construction is technically and legally incorrect, and points out that the words of a claim must not be interpreted in the abstract, but must be given their “plain meaning” in the context of the written description and as customarily understood by those skilled in the relevant art.² Those of ordinary skill in the art would not be confused by Applicant’s claim term – body. In fact, the PTO’s own Class Definition for Class 279 uses the term “chuck body” or “body” no less than fifteen times.³ Applicant notes that his term “body” is not limited to chucks and may also include arbors.

Examiner notes that the above assertions are addressed to arguments presented prior to the current Application filed under an RCE submitted previous to the previous rejection. These arguments are presented for the first time now and its relevancy to the current rejections with the currently amended (twice since the above cited argument which Applicant is now addressing)

can not be determined. Examiner is aware of the term "body" as relating to tool holders and work holders and addresses this issue more clearly for Applicant to help clarify Examiner's definition of the "body" of a holder, such as those found in the prior art.

Applicant asserts:

Nonetheless, Applicant has amended the claims to clarify that the drive member has a portion that is radially displaceable. Clearly, the dowels 120 and the retainer 78 of Mueller '284 do not include radially displaceable portions. Thus, the cited references do not disclose each and every element as claimed in Applicant's claims.

Examiner disagrees. As discussed above, Mueller '284 expressly discloses radially displaceable portions in accordance with the claimed limitations.

Applicant asserts:

The specific construction and arrangement of Applicant's claims 1 and 22 has the significant practical advantages of providing a workholding apparatus that resists relative rotation under high torsional loads such as those due to high cutting tool forces. Neither this specific construction and arrangement nor its significant practical advantages are disclosed, suggested or taught to skilled persons by the Mueller '376, Andre, and Mueller '284 references whether considered alone or in combination. Accordingly, claims 1 and 22 define novel and patentable subject matter and are allowable for at least these reasons.

Examiner disagrees as is detailed above.

Applicant states:

Amended Claim 11

Amended claim 11 recites, *inter alia*, at least one diaphragm carried by a body, wherein a fluid chamber is at least partially defined therebetween and wherein the diaphragm has a portion that is radially displaceable. Amended claim 11 also recites, *inter alia*, that the at least one diaphragm has an annular flange portion axially abutting and attached to at least a portion of the body to resist rotation of the diaphragm relative to the body. Amended claim 11 further recites, *inter alia*, at least one collet is carried by the body and has at least one displacement relief therein.

Examiner agrees with this statement.

Applicant asserts:

The cited references fail to disclose an annular flange portion of a diaphragm axially abutting and attached to the body to resist rotation of the diaphragm relative to the body. Rather, the Mueller '376 reference discloses that a bladder ring 45 is merely mounted on the retainer 44, which includes beads 44a for securely mounting and sealing the complementary configured, annular return lips 45a of the ring 45. But a review of the Mueller '376 reference reveals that the return lips 45a are not attached to the retainer 44, and certainly not for the purpose of resisting rotation of the ring 45 relative to the base 12. In fact, the ring 45 can rotate relative to the retainer 44 or base 12, precisely because the ring 45 is not attached thereto. Thus, the Mueller '376 device suffers from the problem identified and solved by Applicant.

Examiner notes that this argument is addressed in the above comments. Applicant is arguing claim limitations that are not present in the claims.

Applicant asserts:

Similarly, the Mueller '284 reference discloses a bladder ring 82 mounted on a retainer 78, which includes flanges 86, 88 to capture distal ends 84 of the ring 82. But a review of the Mueller '284 reference reveals that the distal ends 84 are not attached to the flanges 86, 88, and certainly not for the purpose of resisting rotation of the ring 82. In fact, the ring 82 can rotate relative to the retainer 78 or base 22, precisely because the ring 82 is not attached thereto. Thus, the Mueller '284 device suffers from the problem identified and solved by Applicant.

Examiner notes that this argument is addressed in the above comments. Applicant is arguing claim limitations that are not present in the claims.

Applicant asserts:

Likewise, the Andre reference discloses a ring 26 having opposed flanges 72, which in assembly engage shoulders 74 of a retainer 70. But a review of the Andre reference reveals that the flanges 72 are not attached to the shoulders 74 of the retainer. In fact, the ring 26 can rotate relative with respect to the retainer 70 or body 30, precisely because the ring 26 is not attached thereto. Thus, the Andre device suffers from the problem identified and solved by Applicant.

Examiner notes that this argument is addressed in the above comments. Applicant is arguing claim limitations that are not present in the claims.

Applicant asserts:

Further, Applicant notes that the Office Action only generally refers to the drawing figures of the cited references' and fails to specifically identify how an annular flange portion in the cited references axially abuts and attaches to the body.

It is not clear what Applicant is stating by the comment that the previous Office Action "only generally refers to the drawing figures". As is stated above, and specifically pointed out in the rejections, the prior art teaches (and shows in the drawings) the annular flange portions of the drive member (diaphragm, bladder, expandable ring) axially abutting and attached to at least a portion of the body, as claimed. Applicant is referred to the above rejections, and Figures 1 of each reference for the reference numbers cited as to the claimed limitations.

It is further noted that Applicant is again arguing claim limitations that are not present in the claims.

Applicant states:

The specific construction and arrangement of Applicant's claim 11 has the significant practical advantages of providing a workholding apparatus that resists relative rotation under high torsional loads such as those due to high cutting tool forces. Neither this specific construction and arrangement nor its significant practical advantages are disclosed, suggested or taught to skilled persons by the Mueller '376, Andre, and Mueller '284 references whether considered alone or in combination. Accordingly, claim 11 defines novel and patentable subject matter and is allowable for at least these reasons.

Examiner disagrees and maintains the claimed limitations are found in the prior art as discussed above.

Applicant states:

Amended Claim 21

Amended claim 21 recites, *inter alia*, a collet used in conjunction with a workholding apparatus including a diaphragm, wherein the collet has interengagement elements projecting therefrom and engaging the diaphragm to resist relative rotation of the collet.

Examiner agrees with the statement.

Applicant asserts:

Although the Andre reference discloses a tubular metal sleeve including tabs received in slots of a stop ring to drive the sleeve, the Andre reference fails to disclose a collet having interengagement elements engaging a diaphragm.

Examiner notes that the claimed limitations of claim 21 is directed towards a collet with the intended use of being “used in conjunction with a workholding apparatus including a diaphragm having a portion that is radially displaceable”. Andre meets the limitation of the claimed collet of claim 21. There is nothing limiting the collet as taught by Andre from being used in conjunction with a workholding apparatus which includes a diaphragm having a portion that is radially displaceable such that the design of the workholding apparatus is such that the interengagement elements of the collet of Andre engages the diaphragm.

Applicant asserts:

The Mueller '376 reference discloses that a stop ring 48 bolted to a sidewall 13 has a flange 48a with a radial stop surface 48b to limit inward pivoting of fingers 22c, 22d of an outboard collet 22. But Mueller '376 does not disclose that the collet 22 itself has interengagement elements that engage the diaphragm 45 to resist relative rotation of the collet 22. Accordingly, Mueller '376 fails to disclose a collet having interengagement elements, and certainly not for engaging a *diaphragm*.

Examiner notes that the claimed limitations of claim 21 is directed towards a collet with the intended use of being "used in conjunction with a workholding apparatus including a diaphragm having a portion that is radially displaceable". Mueller '376 meets the limitation of the claimed collet of claim 21. There is nothing limiting the collet as taught by Mueller '376 from being used in conjunction with a workholding apparatus which includes a diaphragm having a portion that is radially displaceable such that the design of the workholding apparatus is such that the interengagement elements of the collet of Mueller '376 engages the diaphragm.

Applicant asserts:

In the response to arguments section of the Office Action, it is asserted that a stop ring is a diaphragm. But those of ordinary skill in the art would not confuse these two structurally and functionally different components. Nonetheless, Applicant has amended claim 21 to recite the diaphragm having a portion that is radially displaceable. Clearly, the stop rings of Andre and Mueller '376 are not diaphragms, and certainly do not have radially displaceable portions.

Examiner notes that the above assertions are addressed to arguments presented prior to the current Application filed under an RCE submitted previous to the previous rejection. These arguments are presented for the first time now and its relevancy to the current rejections with the currently amended (twice since the above cited argument which Applicant is now addressing) can not be determined. As stated above, both Andre and Mueller '376 teach the limitations of the radially displaceable diaphragms.

Applicant asserts:

The Buck reference discloses a collet 31 including elastomeric segments 35, and metal blades 36 between the segments 35 and having end portions 39 projecting beyond the segments 35. But Buck does not disclose that the end portions 39 are interengagement elements that engage anything, and certainly not a diaphragm and even less for the purpose of resisting relative rotation of the collet 31. Thus, Buck fails to disclose a collet having interengagement elements, and certainly not for engaging a diaphragm.

Examiner notes that the claimed limitations of claim 21 is directed towards a collet with the intended use of being “used in conjunction with a workholding apparatus including a diaphragm having a portion that is radially displaceable”. Buck meets the limitation of the claimed collet of claim 21. There is nothing limiting the collet as taught by Buck from being used in conjunction with a workholding apparatus which includes a diaphragm having a portion that is radially displaceable such that the design of the workholding apparatus is such that the interengagement elements of the collet engages the the workpiece holding diaphragm.

Applicant asserts:

The specific construction and arrangement of Applicant's claim 21 has the significant practical advantages of providing a workholding apparatus that resists relative rotation of a collet under high torsional loads such as those due to high cutting tool forces. Neither this specific construction and arrangement nor its significant practical advantages are disclosed, suggested or taught to skilled persons by the Mueller '376, Andre, and Buck references whether considered alone or in combination. Accordingly, claim 21 defines novel and patentable subject matter and is allowable for at least these reasons.

Examiner disagrees and refers Applicant to the above discussion and rejection of claim 21.

Applicant asserts:

Independent Claims 1, 11, 21 and 22

In view of the discussion above regarding independent claims 1, 11, 21, and 22, each of these claims defines novel subject matter, which is not anticipated by the Mueller '376, Andre, Mueller '284, and Buck references and also defines patentable subject matter over these references, individually or in any combination, for at least the foregoing reasons. Accordingly, reconsideration and allowance of each of independent claims 1, 11, 21, and 22 is requested.

Applicant is referred to the above discussion and rejection of claims 1, 11, 21 and 22.

Applicant asserts:

Dependent Claims

Each of the dependent claims 2, 7, 9, 12, 17, 19, 20, and 23, which were rejected as being anticipated, is ultimately dependent on one of independent claims 1, 11, 21, and 22 and, hence, each defines novel and patentable subject matter over the cited references for at least the foregoing reasons.

Examiner disagrees and refers Applicant to the above discussion and rejection of the claims.

Applicant asserts:

Rejection Of Claims 3-4, 6, 13-14, and 16 Under § 103

Applicant's dependent claims 6 and 16 were rejected under 35 USC § 103 as being unpatentable over Mueller '376 in view of Buck, Mueller '284 in view of Buck, and over Andre in view of Buck. Also, Applicant's dependent claims 3-4 and 13-14 were rejected under 35 USC § 103 as being unpatentable over Mueller '376.

Applicant's claims 3-4, 6, 13-14, and 16 all recite, *inter alia*, at least one drive member carried by a body, wherein a fluid chamber is at least partially defined therebetween and wherein the at least one drive member has an annular flange portion axially abutting and attached to at least a portion of the body to resist rotation of the drive member relative to the body. The cited references disclose various devices which neither recognize the problems confronted and solved by Applicant's invention, nor disclose, teach, or suggest any solution at all to these problems, and certainly not Applicants' solution embodied in claims 3-4, 6, 13-14, and 16.

Examiner disagrees and refers Applicant to the above rejections.

Applicant asserts:

At least for the reasons discussed above with respect to independent claim 1 and 11, the cited references fail to disclose a body carrying a drive member having an annular flange portion that axially abuts and attaches to the body, and certainly not for the purpose of resisting rotation of the drive member relative to the body. In fact, rotation of a drive member relative to a body is a problem identified only by Applicant's and not by any of the cited references. Absent a recognition of this problem, it would be impossible for its solution to be obvious to anyone, and the cited references cannot possibly suggest, singularly or in combination, a solution as novel as Applicant's invention.

Examiner disagrees and refers Applicant to the above discuss and rejection.

Applicant asserts:

Additionally, claims 6 and 16 recite drive and driven members splined together to resist rotation therebetween. Contrary to the assertion in the Office Action, Buck teaches nothing whatsoever about splined connections and, in fact, a text search of the Buck references reveals not a single mention of the word spline. And as stated previously, Buck does not disclose that the end portions 39 are interengagement elements that engage anything, and certainly not for the purpose of resisting relative rotation. Thus, Buck fails to disclose drive and driven members splined together to resist relative rotation therebetween.

Examiner notes that in regards to claims 6 and 16, Buck was used to teach that it is well known in the art to have splined connects as an alternative way to connect two elements together. Splined connections are well known in the machine tool art, as taught by Buck. Applicant notes

that the word “spline” was not found in a text search of Buck. The use of splines (and the word spline) is well known in the art.

Examiner notes the numerous disclosed embodiments in Applicant's disclosure.

Applicant addresses the embodiment which uses splines in paragraph 0025 of Applicant's disclosure and figure 5.

Applicant appears to be asserting that Buck does not disclose “splines”. Applicant is referred to col. 4, lines 44-55, which addresses structure in accordance with Applicant's disclosed “spline” structure.

Examiner notes, as is noted in Applicant's various embodiments (splines being the third embodiment) that the use of splined connects are clearly an alternative way to connect two elements together as taught by Buck. See above claim 6 and 16 rejection.

Applicant assets:

Moreover, claims 3-4 and 13-14 recite a drive pin extending radially through a portion of a driven member and a portion of a drive member to resist relative rotation therebetween. While the Mueller '376 reference may teach use of dowel pins, it does not specifically disclose a drive pin extending radially through a portion of a driven member and a portion of a drive member, and certainly not for the purpose of resisting relative rotation therebetween.

Examiner notes that the limitations of claims 3-4 and 13-14 were addressed as an obvious variant to applicant's various disclosed embodiments. See above claim 3-4 and 13-14 rejection.

Applicant asserts:

Neither Applicants' specific construction and arrangement nor its significant practical advantages are disclosed, suggested or taught to skilled persons by the cited references whether considered alone or in combination. Accordingly, claims 3-4, 6, 13-14, and 16 define novel and patentable subject matter and are allowable for at least these additional reasons. Therefore, reconsideration and allowance of each of claims 3-4, 6, 13-14, and 16 is requested.

Examiner disagrees and refers Applicant to the above discussion and rejections.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to /Dana Ross/ whose telephone number is 571-272-4480. The examiner can normally be reached on Mon-Thurs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Monica Carter can be reached on 571-272-4475. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3722

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dana Ross/
Primary Examiner
Art Unit 3722

/DMR/